ITEMS OF INTEREST.

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Shots from the Profession.

OUR NEW YORK LETTER.

[From the Dental Independent.]

The plot thickens! The old war-horses of the profession, while scenting the fray from afar, show no signs of terror at the prospect, but are, on the contrary, evidently anxious for the combat.

The attitude of the *professional* profession toward the "Sheffield Tooth Crown Co.," or the "International Tooth Crown Co.," or whatever it is, has changed.

Until recently the profession has looked upon this concern and its double column advertisements as they have upon the proprietors and advertisements of "Harris' Harassing Hair Harbinger," or any other "cure-all," whispering a low "*quack*," to themselves, perhaps, but not disposed to interfere with its course as long as they were not encroached upon, remembering, possibly, the old adage: "Wrestling with a dirty dog, if you are not thrown, you are dirtied." Now, however, the profession seems to be placed in a position where they must either fight or humbly bend their necks for a yoke not easier to bear than was the Goodyear patent, and one more galling, as the royalties would be upon patents on methods in use for years, and originated, perhaps, in their own offices.

In the fables of olden times, the cutting off of one head of a dragon is said to be followed by the growing out of a number of others, all more ugly than the one destroyed. Will it be so now if steps are taken to check in any direction the growth of this particular dragon? We hope not, though it does seem as if every movement made by professional dentists against the Sheffields, from their expulsion from the dental societies to the many other expressions of contempt shown them, has resulted in, or at least been followed by a growth of their prosperity. The master spirit of the so-called Sheffield Co. has very evidently had a series of plans which he has thus far been very success-

ful in carrying out. He is said to have made the statement that "in time he would have every member of the dental profession at his feet"—whatever that may mean—and the procuring of patents upon all the so-called Richmond methods, the ousting of the Richmonds when he had used them all he wished, and the issue of licenses to dentists, all seem, indeed, to be steps in that direction. These licenses are "bold, bad" documents. They are issued for one year only, and give their fortunate (?) purchaser permission to use said methods in consideration of a sum of money and the subscription by the purchaser to several iron-clad oaths, binding him to all sorts of things, one of which is that he will not take or join in any action against the company during any of the many years the patents have to run, even though they—the Sheffields—(and they reserve the right to do it) refuse to renew the license at the end of the first or any year.

In order to procure the patents, Cassius M. Richmond did take oath that the methods in question were original with him and that they were new, having been in use less than two years. As they were not applied for until January, 1883, it would be an easy matter, of course, to prove that the methods had been in use many years before the application was made, and therefore the patents were fraudulently obtained. These Richmond patents are now owned by the Sheffields and were obtained with their assistance. Dr. C. M. Richmond is under indictment for perjury on account of his share in the fraud; have his abettors done anything criminal, and can they be held responsible for their misdeeds?

These questions and others were asked at the March meeting of the First District Dental Society, by one of its most influential members, who made the assertion that if the half could be proved of which he thought the Sheffield Co. guilty, "our State prisons have not been built in vain."

Considerable interest was taken by those present in the remarks of a celebrated patent lawyer who has been the attorney of the Richmonds against the Sheffields, and therefore understanding the case perfectly from a legal standpoint. Being invited to address the meeting, this gentleman gave the members much information concerning the patents, and what he considered to be the "criminality" of the Sheffields on account of the part they had played in procuring them. He also told of a comparatively recent national law which relates to the forfeiture of land grants when they can be proved to have been obtained through fraud; also of the recent very important decision of Judge Wallace that this law also applies to *patents* which have been fraudulently obtained. Therefore, this gentleman reasoned that as it would be a simple matter to prove that fraud had been practiced in procuring these patents, it would be only a question of delay. which the Sheffields could

cause by the free use of money, when dentists would be able to have them set aside. The matter was discussed as freely as limited time would allow, and the temper of those present was very evidently in favor of raising money for the purpose of pushing the matter at once, but after a vote upon the question it was at length decided to let the subject rest until the next meeting.

After voting ten dollars each to the porters of the S. S. White Dental Manufacturing Co. for their care of the society at their monthly meetings, refusing to entertain Dr. Francis' resignation, and listening to Dr. Bodecker's excellent paper on Iodoform, the society adjourned.

The minds of the leading New York dentists are at present somewhat disturbed over the subject of cylinder filling—*pro* and *con*. The tinder has been quite ready to ignite for some time, and the spark was applied at the February meeting of the Odontological Society by one of its members, who, during the discussion on Prof. Fillebrown's excellent paper on "Gold and its Manipulation," made the assertion that not only was cohesive gold the only gold to use, but that a perfect or durable filling could not be made with cylinders. This remark called forth a reply from an advocate and very successful practitioner of cylinder fillings, the same gentleman who, a few years ago, sent teeth with cavities in them to those of his associates of whose work he had the highest opinion, with the request that they should fill them, each after his own fashion, he to bear all incurred expense, and afterwards they should be subjected to all possible tests bearing upon their relative excellence. All complied with the request save one, whose refusal—he being the most earnest advocate of the use of cohesive gold, and curiously enough the same gentleman whose severe condemnation of cylinder filling is noted above—was mainly instrumental in causing the experiments to be dropped.

The discussion of the relative merits of the two methods now seems to be fully opened again, and it is possible that some practical tests may be made by the advocates of each method which will allow conservative outsiders, at least, to come to some decision. One thing is certain, the end is not yet.

To prevent unnecessary cutting of the gums when using emery strips for polishing on approximate surfaces, tie a stout ligature two or three times around the neck of the tooth. This will effectually protect the gum during the entire process, or until the strips cut it off, when, if polishing is not complete, the tooth can be ligated again. This is very convenient and saves pain.—A. H. BERT.

For lining cavities of teeth before filling, especially where they are sensitive, or near the pulp, gutta-percha varnish will be found good.—It is excellent to cover exposed pulps, before filling with oxy-phosphate.

A CASE OF AMAUROSIS DEPENDENT UPON DENTAL IRRITATION.

BY W. W. ALLPORT, M.D., D.D.S., CHICAGO, ILL.

Mrs. L., aged 34 years, of nervo-bilious temperament, and fairly good health, called, in May, 1879, for an examination of her mouth. Found the left first superior bicuspid tooth decayed upon the distal surface, but not so extensively as to expose the pulp, or sufficiently near to it as to require, in my judgment, special protection. The cavity was filled with gold and the case discharged. In April, 1881, one Sabbath, I was called in great haste to see the patient at her home. The tooth which I had filled had become suddenly very sore, with great pain in the left eye. The patient then explained to me as the reason she had not visited me for a regular examination, as had been her custom every three or four months, a serious difficulty with the left eye, involving partial loss of sight, profuse lachrymal discharge, and severe paroxysmal pain.

Upon examination I resolved to remove the filling, and did so at once. The history is as follows:

For several weeks after the tooth was plugged there was a slight uneasiness in it, with sensitiveness upon sudden changes of temperature, such as were produced by taking hot or cold drinks into the mouth; but nothing so marked as to require, in her judgment, any attention, and these symptoms finally passed away. In about six months after the operation upon the tooth she began to experience pain in the left eye, of intermittent character, increased flow of tears and some slight obstruction of sight. Being in New York soon after the appearance of the trouble, she consulted one of the most eminent ophthalmologists of that city, who, after a careful examination, said he "could discover no local cause to account for the difficulty, and therefore it must be of constitutional origin, though obscure." He prescribed constitutional treatment, as he said, "to build up the system."

After faithfully carrying out his instructions for some weeks and getting no relief, she called upon him again for another examination, the result being the same as the previous one, and the constitutional treatment continued.

On returning to Chicago she consulted one of the leading ophthalmologists, who also said he could find no local cause, and that it must be of systemic origin.

The symptoms for months had grown gradually more aggravated, so that she had been obliged to give up reading and writing, as all such efforts would aggravate the symptoms.

In this condition she again visited New York, for the purpose of consulting her oculist, feeling sure that as her general health was good, there must be some local trouble with the eye that had been over-

looked. After a third careful and most painstaking examination, he said he could find no sufficient local cause for the symptoms complained of, and that he could do nothing for her, except what might be hoped for through constitutional treatment.

The history of the case was so remarkable, that I was led to make a most thorough examination of her teeth on her first visit to my office after the removal of the filling, and on percussing the tooth that had been referred to, found it slightly tender; and as this was the only tooth manifesting the slightest abnormal condition, I resolved to ascertain the condition of the pulp. On excavating the cavity, I found the bulbous portion of the pulp chamber filled with secondary dentine quite up to a line corresponding to the edge of the alveolus. Above this I found a living pulp in a state of low inflammation. As the instrument pierced the pulp the sensation was communicated to the eye, causing a paroxysm of pain. The patient then stated that since the removal of the filling the pain in the eye had been much less, and the soreness of the tooth was considerably relieved.

After removing the pulp, which I did at once, and treating the tooth for a few days, the pulp canal was filled with oxy-chloride of zinc cement, and the crown cavity with oxy-phosphate. The case began to improve at once, and in a few weeks the sight was restored to its normal condition, and all the other symptoms had passed away.—*American Medical Association.*

REPLACING AN INCISOR WHICH HAD BEEN KNOCKED INTO THE ALVEOLUS.

BY C. E. FRANCIS, D.D.S., NEW YORK.

One afternoon, some five years ago, a lady residing in the neighborhood came rushing into my office, bringing with her a child—a little girl scarcely four years of age, who, but a few minutes before, was precipitated from a chair on which she had been standing, headlong to the floor. In her descent her left superior central incisor collided with the base of a walnut dressing case, and in an instant the tooth disappeared. The child's lip was cut and swollen, and the blood was flowing copiously. Wet napkins were applied, and after the hemorrhage was sufficiently checked for examination, it was found that the tooth still remained, but had been driven so far upward that the coronal cutting edge only extended beyond the line of the alveolar margin.

The following morning nitrous oxide was administered and the tooth carefully brought down to its original position. Topical treatment soon allayed the inflammation, and in time the tooth became firm.

Some degree of anxiety was felt concerning the germ of the permanent incisor, fearing that it might have suffered injury from the sudden and severe shock. In proper time, however, it made its appearance, bearing no evidence of having ever been disturbed.—*Independent Practitioner.*

NEURALGIA.

BY DR. T. W. BROPHY, D.D.S., CHICAGO.

A case of neuralgia, of great importance to the dental surgeon, was recently described to me by Dr. Deering, of Chicago. A lady about forty-eight years of age, strong and healthy, residing in Kansas City, called on a dentist of that place to be relieved from severe neuralgic pain, described by her as analogous to toothache; she had lost all her superior teeth about twenty-five years earlier, and had since worn artificial teeth. The pain was located on the left side of the arch, in the region of the antrum. The dentist examined her mouth carefully, and concluded that the plate she was wearing was the sole cause of her suffering.

The lady at once had a new plate constructed by him, but her suffering was not in the least abated. The dentist thereupon called a surgeon, who also examined her mouth, and pronounced her condition the result of a tumor upon the palatine plate of the left superior maxillary bone, and advised an operation. She consented. The mucous membrane was divided, a chisel and mallet were brought into requisition, and an effort made to remove the tumor. Having no success, however, he desisted, feeling he was not equal to the case.

The following day the face was greatly swollen. The surgeon assured her that her's was an unusual case, and advised her to go at once to Philadelphia, and employ a distinguished surgeon of that city, who would effectually cure her. Following his advice, she went to Philadelphia, via. Chicago.

Stopping here a few days with friends, she was requested to call on a dentist for his opinion.

He examined the case and informed her that she was on the right track. It was a very serious matter and required the highest skill to treat it. On arriving in Philadelphia, she consulted the eminent surgeon, and he pronounced the trouble ulceration of the mucous membrane of the antrum. With a drill he made an opening into the antrum, and through the opening applied the usual remedies for the disease. This was continued for some time with constitutional treatment consisting of quinine, iron and other remedies which were indicated.

The treatment was continued eighteen months, with very little, if any relief. She left Philadelphia to return home, with directions to continue the quinine for two months longer and report by mail.

She stopped in Chicago, on her return home, and called on Dr. Deering, who was the first to correctly diagnosticate her case. The pain was still very severe, and located in the region of the antrum. A protuberance was observed midway between the alveolar ridge and the

palatine suture of the maxillary bones. An exploring instrument was passed through to the enlargement, and an idea formed by the doctor of the nature of the trouble.

He then questioned her in regard to her dental history. She informed him that her teeth were all extracted when she was about twenty-five years of age.

The question was then asked: "Are you sure they were *all* removed?" It then occurred to her for the first time that on each side of her mouth the second deciduous molar remained at that time, the dentist having called her attention to the fact, and remarked that possibly she would sometime get the second bicuspid teeth. An operation was performed, a bicuspid tooth was found imbedded lengthwise in the maxillary bone, with apex well into the antrum. This was with some difficulty removed. The crown was chipped off a little by the Kansas City surgeon, who failed to remove it, otherwise the tooth was in a perfect condition. After the effects of this operation had passed away, the patient, for the first time in four years, had perfect immunity from pain. Three months subsequently, however, pain of the same character was felt on the opposite side, and another operation was performed with the same result. Dr. Deering kindly brought this lady to my office, and upon examining the mouth, two slight grooves were seen on either side where the teeth were removed. No neuralgic pain has been felt since. The opening made into the antrum, however, has not closed. The inflammation brought on by the use of the strong medicinal applications is, indeed, difficult to reduce. No evidence of the operation, other than that spoken of, exists. Thus a patient suffered pain of the greatest severity during so long a period, all owing to failure on the part of the professional gentlemen she had employed to accurately diagnosticate her case.

The lesson to be learned from this case is, think of more than one thing when making up a diagnosis. This was a case belonging strictly to dental surgery, and had the dentist possessed sufficient knowledge to accurately diagnose the case, the difficulty could have at once been corrected. The cause of true neuralgia, is a question upon which the most eminent pathologists cannot agree.

Excellent Laving Fluid.—Take one hundred parts of the finest ninety-five per cent alcohol, and add 3 parts oil of neroli, 180 parts extract of patchouli, 180 parts extract of jasmin, 30 parts Peruvian balsam, 15 parts Tolu balsam, 30 parts benzoic resin, and 400 parts water of orange flowers. The resins are first to be dissolved completely in alcohol, frequently shaking and digesting, filtered, and the other ingredients are then added. To each 10 parts of the ready essence 1,000 parts of water are to be added, and with it wash the face, without using soap. Employ a cloth for washing.

REPLANTATION.

[Extract of Discussion in the Central Dental Association of Northern New Jersey.]

Dr. Watkins.—Since the meeting at my house I have had several inquiries made in regard to extracting and replacing teeth. The case which I showed that night has been perfectly successful. The next case I wish to speak of is that of a young lady about twenty-three years of age. The pulp of a second bicuspid was considerably congested, and she insisted upon having it out. I could not persuade her to have the tooth treated and filled, but after extracting it I insisted on putting it back again. I first trimmed the root off about one-sixteenth of an inch, and syringed the socket with a weak solution of carbolic acid. I removed the nerve, filled the canal with gutta-percha, put a little iodoform on the root, and tied the tooth in with silk floss, and in six days she said there was not a particle of soreness. I have seen her frequently since, and it seems to give her no trouble at all, and she considers it just as good as any tooth in her mouth. The next case is that of a young man about nineteen years of age. His first left superior bicuspid I treated in the same way, except that I used nothing to syringe the socket, and at the end of seven days he could eat with it, and it seemed to be entirely well. It seems to me that in many cases where the patient lives at a distance and would have to come several times for treatment, it would be most judicious to extract, fill and replant.

Dr. Ayers.—A young lady once came to me, for whom a physician had extracted the wrong tooth. I proposed to replant it, but the tooth was lost, and only found after a prolonged search, in the coal scuttle. I washed the cavity, replaced the tooth, and now, after a year and a half, it remains in good condition.

Dr. Merritt.—One day last week a lady came into my office, for whom a tooth had been extracted sixteen years ago, and put back, and it is apparently in as good condition as ever, and is doing full duty.

Dr. Barlow related a number of instances of successful replantation.

Dr. Palmer.—A young lady came to my office two weeks ago. I think she had been a patient of mine off and on for several years, but this was the first time I had seen her in four years. I examined her teeth, and, among other things, found one central incisor dead. On questioning her I learned that a blow or fall had knocked out the tooth. Their family physician was called, and arriving some hours after, he had replaced the tooth. It was sore only a few days, and had never given trouble. This was three years before. The physician told her it would never trouble her. It was *very* dark. I suggested opening, treating and bleaching it. Objections were raised because the M. D.

had said it was all right. After some persuasion I gained my point—opened, treated and closed the tooth successfully. Immediately upon opening there appeared enough pus at the orifice to convince them that I was right. A leading physician of this State once came to me, insisting upon the extraction of a troublesome tooth. Examination showed a small cavity in the mesial surface of a left superior lateral incisor, extending into the pulp chamber, with an abscess discharging through the tooth. I advised treatment and filling. He was positive that there was no cure; that such a thing was contrary to physiological law; but he finally yielded to my persistence, though, as he said, against his judgment. To-day that tooth is doing good service, and the physician is at last convinced that dentists may know more about some portions of the body than even a successful physician.—*Independent Practitioner.*

BLACK AND WHITE DECAY.

A sane person can not examine carefully a specimen of black decay, and another of white, and believe them to be caused by the same exciting agent, acting under like circumstances. And it is not easy to believe that the predisposing causes can be the same throughout.

Let us think of black decay and predispositions thereto by way of illustrating what is meant. In some patients, with sluggish constitutions, whose skins seem as if oily, with fetid perspiration, whose breaths give off an offensive odor, showing the presence of sulphuretted hydrogen, we have found quite a tendency to the black variety of caries.

On the other hand, when we find a decidedly scorbutic aspect, with soluble chlorides abounding in the buccal fluids, the tendency or predisposition is not to black decay, but to the most common of all the varieties of caries, which we have often referred to as caused by hydrochloric acid as its exciting agent. This variety is diagnosed by the fact that the organic, or gelatinous portion of the dentine remains undissolved in the carious cavity, while the limesalts are dissolved out. As no one who looks at this variety can, for a moment, believe that its exciting agent is the same that is active in causing white or black decay, so none can be so deluded as to believe that the predisposing causes of this variety are identical with those predisposing to the other varieties. It is true that a certain class of predisposing causes may tend toward any of the varieties of caries, as, for example, those which overcome the vital resisting force of the constitution. But between such and the exciting causes, there is room for another class of predisposing agencies, special and direct in their nature and action.

DR. GEO. WATT.

DISEASE GERMS.

We hear much concerning the germ theory of disease, and the minute organisms which are supposed to produce in the human organization some of the most formidable ailments with which we are acquainted. Among the diseases which are supposed to be caused by the entrance into the system of living germs are fevers (intermittent, relapsing, typhus, typhoid, and yellow), also cholera, diphtheria, and tuberculosis, or consumption. This enumeration presents a frightful array of some of the worst disease-enemies of the human race; and if there is good evidence that there are in nature minute organisms which originate them, no inquiry can be more important and interesting than that regarding their nature and origin.

These germs have been attentively studied, and among medical men, microscopists and naturalists, are quite well understood; but it is exceedingly difficult to convey to the popular reader clear conceptions of their physical forms and the conditions under which they exist and are propagated. They are so exceedingly minute, that the highest powers of the microscope are required to bring them within the reach of vision. Bacteria and other forms are easily produced in clear liquids, as water, by placing in the same a small quantity of organic matter, as infusion of hay, and exposing it to the air. In a few days the liquid will become turbid or cloudy; or perhaps a film will form upon the surface, or a deposit upon the walls of the vessel which contains it. If we examine this turbid matter microscopically, we shall find that it is composed of minute organized bodies, some rod-like, others globular, others spiral. They are capable of self-propagation and endowed with motion, at least so it is affirmed by the best observers. Not only in liquids, but in the dust which floats in the air, are these forms found, and also in certain soils, and in all places where uncleanliness exists. We know they exist in the blood, and, in some instances, in the tissues of the human body when diseases of certain forms prevail; for they have been detected by the aid of the microscope in vast numbers. The connection between these organisms and disease may be regarded as well established; and hence arises the inquiry: How can they find their way into the systems of healthy persons to produce disease?

There are two prominent inlets into the body, which are like open doors, with no sentinels to guard them. The air is constantly passing into the lungs, and water and foods are entering the stomach at frequent intervals during every twenty-four hours. It is probable that through the respiratory organs they enter most frequently; but in the water we drink, and in certain forms and conditions of foods, we find favoring conditions for their production and transmission. It is therefore of the highest consequence that we should study to avoid bad air under all circumstances, and polluted waters of wells and cisterns, which are fruitful sources of disease germs. With proper caution we can avoid the enemy which lurks around us, and save ourselves from much suffering.—*Popular Science News.*

THE RUBBER DAM.

In addition to the feeling of safety (to a filling being introduced) imparted to the operator when his rubber dam is in position, it will be found that a positive saving of time and material is the result, as the working qualities of the gold are only secured and maintained where absolute dryness exists, the moisture from the breath alone being sufficient to defeat an operation, which has perhaps already cost the dentist hours of labor and perplexity, to say nothing of his throbbing temple and disabled back!

As there are many in the profession practicing in remote places who have never seen the above appliance in practical use, a few words in explanation of the ordinary proceedings may be advisable and appropriate: Before commencing to excavate, it is proper to cut, in the "dam," at least three small holes, varying from the diameter of an ordinary pin's head to that of a small pea; or, perhaps, the safer rule is to regulate the size of the openings by that of the necks of the teeth over which they are designed to go, aiming to secure sufficient tension in all directions, as to preclude the possibility of the encroachment of the saliva. These openings should be at such a distance from each other as to prevent the "bagging" of the dam when in position, as should this occur, it will prove a serious hindrance in filling approximal cavities. Having selected, for instance, a *left superior central incisor* with approximal cavity, it is proper to cut into the rubber dam two openings of equal size for the centrals, and one smaller for the left lateral incisor, proceeding to introduce the teeth through their respective openings, until the dam shall invest them above the point of decay, where it should be closely confined by clamps, or some other appliance suited to the case. After the proper position shall have been attained, the upper corners of the apron of rubber may be confined by means of elastic cord and hooks behind the head of the patient, while the lower edge is kept down by weights hanging upon the breast.

The operator will find the above process exceedingly simple, as there is seldom any difficulty in carrying out the plan when the teeth are situated favorably; but in managing molars it will sometimes be found impossible to accomplish the object, without the assistance of suitable forceps and a varied assortment of clamps.

It will also sometimes baffle an inexperienced operator to get the dam between such teeth as grow in very close contact with each other, but by using thin metallic wedges, a sufficient space may invariably be gained to admit of the adjustment of the rubber over a single tooth at a time.

The dark shade given by the rubber dam to all surrounding parts has been a serious obstacle to its use in posterior approximal cavities in molars. To overcome this difficulty it is necessary, in addition to

securing the best possible light, to resort to the assistance afforded by the mouth mirror. We may here be pardoned for calling the attention of inventors and manufacturers of dental goods to the practicability of supplying to the profession mouth glasses which can be attached to adjoining teeth, giving light from a fixed point, in any direction desired during an operation.

An ordinarily small mouth mirror, mounted upon a ball and socket joint, with a few self-adjusting clamps, will be found of infinite advantage in filling cavities, where it is difficult with the ordinary glasses to gain sufficient light. The dam will most effectually prevent the rapid clouding of the mouth glass, which has heretofore rendered the use of the latter so unsatisfactory.

In enumerating the advantages of the article on which we write, we must not fail to note the fact, already made public by more than one gentleman of the profession, that a tooth protected from the secretions of the mouth is infinitely less sensitive than when those fluids are uncontrolled, and here is an argument in favor of its use, claiming the attention of all; for who of us would not gladly diminish the sufferings of those who place themselves in the pale of our professional skill? In addition to the foregoing valuable properties of the rubber dam, we must not omit to touch upon the safeguard it affords in the application of arsenious pastes, carbolic acid, etc., all of which are, without this protection, often more or less liable to injure the soft parts of the mouth.

Neglect—want of cleanliness, says Dr. George Watt, is the leading predisposing cause of dental decay. We have seen patients so indifferent in regard to the condition of their mouths that ordinary advice failed to induce them to do better. We have had to talk coarsely—almost harshly, to such, to get them to give their mouths the necessary attention. If such ones expressed surprise at the rapid decay of their teeth, we have told them if they treated their hands as they were treating their mouths, their finger nails would rot off. Yet after all that has been said, this neglect still prevails. If a drop of fresh cream adheres to the lips of a young lady, she will not think of giving or taking a lover's kiss till it has been carefully removed by washing. But she will besmear her mouth internally with "bacon and gravy," green peas and griddle-cakes, molasses and jellies, soups and salad, and leave their debris to ferment and putrefy, so that the kiss of betrothal on her lips is like painting the outside of a sepulcher while within it is "full of dead men's bones and all uncleanness." And her own lips constantly kiss all this uncleanness.

GUTTA-PERCHA SOLUTION FOR FILLING ROOTS OF TEETH.

BY C. F. W. BODECKER, D.D.S., M.D.S., NEW YORK.

Whenever we hear of anything new, however good and practical it may appear, we adopt it in our practice with some hesitation, or even suspicion. This was the case with me before I began to fill root canals with a solution of gutta-percha in chloroform. However favorable this material appeared to me then, I could not make up my mind to adopt it without first experimenting with it out of the mouth. I took two lower bicuspid roots which had just been extracted; I removed everything from the canals by means of a bur, after which I filled one of these roots with a solution of gutta-percha without any further delay. The canal of the other root, however, after it was drilled, I washed thoroughly with absolute alcohol before the gutta-percha was introduced. After two or three days, when the filling material had hardened, I split both these roots, and by placing them under the microscope found that where I had used absolute alcohol for the dehydration of the pulp canal previous to the introduction of the filling material, the dentinal canaliculi were filled for a little distance with gutta-percha, whereas in the other root I could see no gutta-percha in the dentinal canaliculi. The results induced me to lay aside all other filling materials for filling root canals. The method of introducing the filling is as follows: To an ounce of a rather thin solution of gutta-percha in chloroform, I add about ʒi of powdered iodoform; of this solution I introduce one or two drops into the pulp canal, and with a smooth broach force it up to the apex. This solution is succeeded by very thin pieces of previously warmed gutta-percha, which, by means of a little thicker instrument, are forced into the pulp canal until it is completely filled. If the foramen in the end of the root is somewhat large, I saturate a piece of cotton, wound around a smooth nerve broach, with the solution of iodoform; let the ether evaporate; dip it into the solution of gutta-percha, and force it into the pulp canal up to the apex of the root, and follow this by small thin pieces of warmed gutta-percha.

If the opening in the end of the root is as large as the canal, I make a shoulder as near to the apex as possible, by enlarging the pulp canal, which, in a straight, accessible root, can be done safely as follows: The exact length of the tooth I obtain with a thin Donaldson's nerve bristle, on the end of which is a very fine hook; around this instrument I wind a few fibers of cotton, about as far from the hook end as I expect the tooth to be long; I pass this instrument into and through the pulp canal, and let the little hook take hold upon the apex of the root. I then adjust the cotton in exact length with the cutting edge of the tooth, withdraw this instrument, and mark the length of the

tooth upon a thin bud-shaped or round bur, with which I enlarge the pulp canal up to about one sixty-fourth of an inch from the end of the root. I then fill the root in the same manner as before described — *Extract from Independent Practitioner.*

FOOD IN CHILD BEARING.

BY DR. HENRY S. CHASE.

We find, approximately, that through pregnancy and lactation, a mother must ingest food for her own skeleton, and that of her child, equal to 34 oz. of unbolted wheat bread, or 170 oz. fine flour bread, or 28 oz. of fresh beef or mutton daily.

Besides the bones and teeth, the muscles and all other tissues require a considerable amount of phosphate of lime.

It would be impossible for a mother to *ingest* and *digest* the quantity of superfine flour which would be necessary for herself and child ; yet there are thousands upon thousands of mothers in this country who *do subsist* chiefly upon fine flour, and whose poor health and starved teeth show but too plainly the effects of defective nutrition.

This is particularly the case in cities where the poor find that food made of wheat flour satisfies the hunger at less cost of money than any other food they can purchase, which is as palatable.

Women and children of the wealthy classes live on food abounding in starch, oil, and sugar, almost to the exclusion of *nitrogenous* food.

Thus we account for the flabby muscle, defective bone and tooth substance and want of general strength and endurance.

"A kernel of wheat," says Professor Horsford, "has two coats of bran or envelopes ; an outer one which may be rubbed off by moistening it ; an inner or true bran coat next to the outer one. On cutting a thin transverse section of a grain of wheat and placing it under a microscope of moderate power, a single row of cells will be observed in contact with the inner bran coat, throughout its inner surface ; these are *gluten* cells, and are the *only* gluten cells in the kernel. Within this circle of gluten cells are the starch cells, which occupy all the remaining space.

The true bran and gluten constitute twelve per cent of the whole berry. The ash of true *bran* contains 6.67-100 per cent, consisting of phosphoric acid, phos. iron, phos. magnesia, silica, and potassa ; of which 7.7-10 is phosphoric acid.

The coats next the gluten cells contain a little phosphates and alkalies, but the *great magazine of phosphates* as well as nitrogenous compounds is in the *gluten cells.* — *Trans. American Dental Association.*

Make a special study of all difficult cases.

ROBINSON'S FIBROUS AND TEXTILE FILLING FOR TEETH.

BY TRUMAN W. BROPHY, M.D., D.D.S., CHICAGO, ILL.

[Read before the Central Illinois Dental Society.]

When this metal, or rather alloy, was introduced to the profession about two years ago, by Dr. J. A. Robinson, of Jackson, Michigan, who invented it, there were many expressions of doubt as to whether it would be as valuable as represented. While two years is not long to thoroughly test any filling material, we are enabled, by close observation, after the lapse of time, to form a pretty accurate opinion as to what we can expect to accomplish with it. It is now believed by many of our better operators to be one of the great discoveries in dentistry. This alloy has, in its short history, gained an important place among filling materials. Indeed it possesses qualities not to be found in any other material with which I am acquainted; consequently it can be used by the majority of operators in the filling of certain cavities with better results than can be obtained by the use of any other material; and when we consider the ease to both operator and patient in using it, as compared with the use of gold, it would seem to commend itself to all. I have said it fills an important place in dentistry; but I do not believe it to be equal to gold, yet there are cases in which I believe it to be superior to the latter. Among these may be mentioned the following: Children's teeth, not only the deciduous but the first permanent molars, previous to about the twelfth year. In a very large majority of cases it is necessary to refill the first permanent molars which have been filled before the twelfth year, hence to insert a gold filling which involves the expenditure of more time than to fill with Robinson's alloy, is to subject a child to unnecessary fatigue and pain. Besides, a child upon whom tedious operations have been performed, holds a dentist in such dread, that it is with great difficulty that he is induced to undergo subsequent operations. Another class of cavities in which I regard this alloy as well adapted is in approximal surfaces, especially those cavities which dip deep down beneath the gums, and thereby make the adjusting of the rubber difficult and painful.

In cavities such as these the base may be filled with Robinson's alloy, to a level with or a little above the gum, keeping dry by the use of napkins, and then the rubber dam may be adjusted and the masticating surface filled with gold. There may be some objection to thus using the metals in union, but I have yet to see any evil effect resulting therefrom. The pluggers to be used should be deeply serrated, and the filling malleted. Presuming the physical properties of the alloy to be familiar to you, I omit a description. The surface of a well-condensed Robinson alloy filling is hard and bright; not, however, as hard as

gold, but much harder than tin. Large pellets should be used; and with a little experience we learn to pack them with positive assurance that the cavity is well filled and *will not leak.*

In most cases of recurrence of caries upon the approximal surface of teeth, it takes place at the margin of the filling nearest the gums, and this is generally believed to be due to the imperfect adaptation of gold.

HEREDITY AND THE TEETH.

Dr. George Watt says: A decided predisposition to decay may be innate—may be born with the child. That the condition of the teeth is influenced by heredity no observing dentist can doubt. We have seen a family in which its female members, for four generations, lacked the left upper lateral incisor. Other cases as striking have been observed. Sometimes when one parent has good teeth, and good dental organs pertain to the family history, and the case with the other parent is just the reverse, we see the children, not usually having dental organs of an average between the two parents, but some of them copying one parent and some the other. It follows, then, that the dentist needs the dental history of the families of both parents to enable him to arrive at a correct diagnosis and prognosis, in any case that presents. He may know that one or both parents had bad teeth, but this may have resulted from accident, while the family history on both sides may show good teeth. In such cases he will be justified in making a favorable prognosis, notwithstanding the condition of the parents' teeth.

We find two classes of constitutional conditions predisposing to decay—one a condition that gives a feeble or defective development of the dental organs, and the other, though the teeth may be excellent in form and texture, we find fails to give the teeth due support and protection. The constitution of the parents, and especially that of the mother, may be unable to impart due vigor, or proper materials in requisite quantities, to the process of developing the teeth. For some cause, hereditary or otherwise, there may be a lack of limesalts in the system, or a lack of physiological ability to appropriate them, and build them in properly with the organic matter of the teeth. A building not well put up is easily taken down. Teeth of defective structure are easily destroyed.

The other condition referred to may show the very best formed teeth, while the alveolar processes, periosteum and mucous membrane may be defective. A defective periosteum cannot give efficient nutrition; deficient development of the alveoli results in inefficient support; while, if anything is wrong with the mucous membrane, we may have to contend with defective, or depraved secretions.

LETTERS FROM A MOTHER TO A MOTHER ON THE FORMATION, GROWTH AND CARE OF THE TEETH.

BY MRS. M. W. J.

[Written for the Southern Dental Journal.]

LETTER IX.—CARE OF THE TEETH, TEMPORARY AND PERMANENT, IN SICKNESS AND IN HEALTH.

As you have cared for your baby's teeth, from the very inception of the germs in the dental groove, throughout the period of their formation and growth, so you must continue to care for them after their eruption.

You must see that they are supplied with nutrient elements to complete the growth of the root, and to keep them in good condition, for —as has been said beforc—in the teeth, as in every other portion of the human frame, worn-out particles are removed, and new supplies required, as long as life lasts.

The baby's teeth, when they first emerge from the soft gums, are like little pearls, white and shining, clean and sound; but they will not long remain so, if watchful care be not bestowed upon them.

From the moment the first teeth appear, give them your personal, especial care. Wash the little mouth carefully, and see that no particles of milk or other food remain lodged in the soft tissues of the lips and cheeks, under the tongue, or around the little teeth, to sour and produce disease.

Wrap a piece of soft linen around your finger and rub the teeth carefully and gently; for when they first emerge they have but little root, and are held in place only by the elastic tissues of the gums and the pressure of the tongue and lips; as the roots grow longer, the sockets are built around them, to retain them firmly in place.

And right here, let me give you a word of caution against allowing the formation of the habit of "sucking the thumb" or fingers, no matter how much it may appear to help in "keeping the baby quiet," for there are, at least, two ways in which this habit is injurious. The teeth not being as yet firmly held in place, the constant pressure of the fingers is liable to push them into irregular positions, interfering with distinct speech as well as with good looks; and again *wind* is swallowed, in the fruitless sucking, and the stomach is unduly distended, causing colics and other disturbances. Especially is this practice liable to affect the regularity of the permanent teeth, if the habit is allowed to become fixed; and even *the nose* is sometimes permanently disfigured by the *hooking* of a finger over it, to hold the thumb in place during sleep.

As soon as the eight incisors are all in place, procure a soft camel's

hair baby tooth-brush, and begin that regular, systematic care, which alone will preserve them intact.

Brush them, from the gum toward the cutting edge; downward for the upper teeth, and upward for the lower teeth; never brush them in the contrary direction, as that will inevitably crowd the gum back, and expose the neck of the tooth, which is not protected by enamel; and never brush them *crossways*, as it is of no benefit to the teeth, and will not remove the food from the interstices, but rather pack it in.

When the *molars* appear, brush them in the same way, all around the crown; and also rotate the brush on the grinding surface, to clean out the *wrinkles* in the enamel, which is frequently incomplete in the center; minute fissures sometimes existing, which allow acids from decomposing food to penetrate to the dentine and cause delay.

Care should be taken to remove every particle of food from around and between the teeth, every time anything is eaten, by at least thoroughly rinsing the mouth with clear water, to which should be added a little lime-water, if acid fruits, lemonade, etc., have been used.

This affords an argument for regularity in eating, for children who are eating *something*, all day long, will never have clean teeth. The child should also be provided with a tooth-pick, (and taught to keep it always within reach, after solid food is allowed, such as is liable to get wedged in between the teeth). Use also a strand of floss silk, or a light rubber ring, to pass between the teeth, from the gum down, to dislodge all particles of food.

The teeth should be brushed, as described, the last thing at night, to remove any possible remnants of food, and the first thing in the morning to remove the deposits from the fluids of the mouth, which accumulate during the quiet hours of rest, this accumulation being prevented during the day by the motion of the lips, tongue and cheeks.

The same care and treatment that will preserve the baby's teeth, will also preserve them at all ages; but you must care for your baby's teeth *yourself*, and only very cautiously and gradually entrust this important duty to the child itself, and then, only under your own eye, for a long time, until you are sure that it will be regularly, thoroughly and systematically attended to.

Especially in *sickness* should the greatest care be taken of the teeth, for then the fluids of the mouth are in an unhealthy condition, and liable to prove injurious to the teeth, they themselves, as integral organs of the human body, participating in the effects of the general disease, suffering from lack of nourishment, and wanting in power of resistance.

The condition of the teeth, after a long illness, usually attributed to *strong medicines*, is very largely due to their neglect at that time.

The *homoepathic* patient is apt to find his teeth in fully as bad a condition as is the *alopathic* sick man, if no precautions are taken in either case.

If the patient is unable to bear a soft brush (and *never* use a hard one under any circumstances), the mouth must be frequently rinsed with clear water, with lime-water, or if the mouth is very foul and the breath offensive, with disinfectants or antiseptics, as, for instance, *permanganate of potash*, or *boracic acid.* A soft rag wrapped round the finger will do much to remove injurious deposits. If concentrated acids, as *elixir vitriol*, or the *tincture muriate of iron*, are used as medicines, they will only corrode the enamel if *left* in contact with it. A neutralizing mouth-wash, thoroughly used, will be more effective in preventing bad effects, than the use of glass tubes, etc., without the wash; though *both* are better than either alone. Where the saliva is acid from disease, *prepared chalk*, rubbed in around the neck of the teeth and between them, and left there through the night, is very beneficial; rinsing with *common salt* and water is also purifying.

Other conditions of the system, giving peculiar odors to the breath, recognizable by the physician or nurse, if not by the patient himself, as that of *ammonia* (to which is attributed white decay, and deposits of *tartar*, and requiring preventive washes of dilute acids, as well as acids internally); or the odor of *sulphuretted hydrogen* (supposed to be a symptom of causes which produce black decay, and demanding washes of *chlorate of potash*, or of *salycilic acid*), come within the province of the *physician*, who should be familiar with these signs and consider the effects of both disease and medicines upon *the teeth*, as well as upon the other organs of the body, and warn both patients and parents how to prevent the ravages which the *dentist* will otherwise have to repair.

Give the Teeth Work to do.—Want of exercise predisposes to decay, though perhaps this is not its worst result, as loosening in the sockets, and absorption or destruction of the alveoli, are almost sure to follow prolonged idleness of any of the teeth. One of the early dentists of Philadelphia has told us that Stephen Girard occasionally laid in a barrel of sailors' biscuit—"hard-tack"—with the explanatory remark that he found his teeth like boys: When they had nothing to do, they fell into loose habits. But it can not fail to be observed by all giving close attention, that such neglected teeth take on decay very readily. How often we see a patient who has used but one side of his mouth in chewing have all sound teeth on the side used, while a number of carious cavities are found on the other side!

GEO. WATT, M.D., D.D.S.

BACTERIA—WHAT ARE THEY?

BY C. S. BOYNTON, M.D.

[Extract from Address before the Vermont Dental Society.]

Bacteria vary in shape from spherical to oval cylindrical and thread-like ; and of the latter variety we find straight or crooked, or spiral, flexible or rigid. We often find the spherical ones connected in bead-like strings or chains. The classifications most in use are based on the size and forms of the organisms.

It is a matter of history that one discovery grows out of or follows another and cannot appear without its proper antecedent. Thus the miscroscope had to be invented and brought to a certain degree of perfection before any process could be made in the study of these organisms. This will become more apparent to the reader when studied in connection with Prof. Burrill's remarks regarding the size of bacteria. " In transverse diameter one twenty-five-thousandth of an inch is a very common measurement, while some, including spherical ones, are even less than half this size. Now, a dot one two-hundredth of an inch across is barely visible to the eye of most persons, hence, a magnifying power of more than one hnndred times across is required to barely see a common-sized *bacterium*. To make out its real shape and any details of structure, ten times the enlargement mentioned is necessary, and not unfrequently as much more as can be secured by the highest possible powers of the miscroscope. Increase the height of an ordinary man one thousand times, and his head would be more than a mile above the earth, yet under the same magnification one of these organisms would have plenty of room to swim freely, to stand on end and dance up and down in the film of water included between two pieces of flat glass pressed so closely together as to strongly adhere by capillary attraction. From one hundred to two hundred and fifty of them placed side by side would be required to stretch across the ordinary thickness of book paper. They are the smallest living organisms known to man, yet, as we shall see, by no means the least important in the economy of nature. Some naturalists have divided bacteria into groups upon their ability to move or not ; but it is now well settled for the greater number that the same species may present itself sometimes in a state of movement, sometimes in a state of repose. The movements are of two kinds—a movement of the corpuscle upon itself, and a movement of translation. The first is sometimes nothing more than a molecular or *Brownien* movement, which occurs in the smallest forms. But at other times it is more extended and consists in a movement of rotation round the axis, or a bending of the body. Prof. Cohn gives us the best description of these movements. After speaking of the two modes of life

characterized by repose and by movement, he says : " In certain conditions they are excessively mobile, and when they swarm in a drop of water they present an attractive spectacle similar to that of a swarm of gnats or an ant-hill. They advance swimming, then retreat without turning about or even describing circular lines. At one time they advance with the rapidity of an arrow, at another they turn upon themselves like a top ; sometimes they remain motionless for a long time and then dart off like a flash. The long rod bacteria twist their bodies in swimming, sometimes slowly, sometimes with address and agility, as if they tried to force for themselves a passage through obstacles, as the fish seeks its way through aquatic plants. They remain sometimes quiet, as if to repose an instant ; suddenly the little rod commences to oscillate and then to swim briskly backward to again throw itself forward some instants after. All these movements are accompanied by a second movement analogous to that of a screw which moves in a nut. When the *vibrios* in shape of a gimlet turn rapidly round their axis, they produce a singular illusion. One would believe that they twisted like an eel, although they are extremely rigid." The causes of these movements were explained at first in the supposed animal nature of the bacteria, and the movements assimilated consequently to voluntary movement ; but this opinion can be no longer sustained, as similar movements are to be seen in a great number of vegetable organisms, such as diatoms, the oscillatoriæ, the spores of algæ and some fungi, etc. " No one, having seen these motions, can doubt the inherent power the little things possess, or can question their right to be classed as living objects ; whether as animals or plants will depend on his previous information and experience, as well as upon what he sees. How they move, that is by what sort of organs or mechanism, is not easy to make out ; but they have this power only when immersed in a fluid medium. When dry, they are motionless except as carried by external agents, as air currents.

" The simple structure of a *bacterium* is a minute cell, with an outer cellular wall enclosing the protoplasmic contents. There are no organs or appendages, save in some, and perhaps all motile forms, there is at one, or at most, two points, an exceedingly fine, hair-like appendage, to the vibrations of which the movement of the organism is attributed. This fine *cilium* or *flagellum,* as it is called, is a difficult thing to see, even with the best microscopic equipment and most expert manipulation, partly on account of its exceeding fineness or thinness, partly from its rapid vibrations. Sometimes by introducing a weak solution of iodine, so as to gradually subdue the movement, the cilium can be made out when not practicable otherwise."

Do not be persuaded to extract a tooth because it is less trouble than to save it.

FOOD.

BY HENRY S. CHASE, D.D.S., ST. LOUIS.

All the usual articles of food, as *naturally* produced, contain the lements for the organization of the body, and for its daily nutrition.

There are many of them which would alone, individually, produce this result ; but the Creator in His munificence has not restricted us to a single article of diet. He has kindly supplied us with unnumbered varieties peculiar to different soils, seasons and zones, suited to the varied appetites of individuals and nations.

Man being a " citizen of the world," finds in every clime either animal or vegetable food adapted to his sustenance.

The proximate principles of animal and vegetable food are very like. Vegetable albumen differs but little from animal albumen. Vegetable gluten is nearly the same as animal fibrine. So, also, of the fats. Olive oil is nearly identical with the margaric acid of the human body. The saline substances are identical in both.

Our daily food must contain *all* the proximate principles, in an *organized* state, which are found to compose the tissues of the body ; otherwise starvation of some of the tissues ensues. Gluten or fibrine to make muscle and cartilage. Phosphates for the bones. Fat for cushions, lubrications and reserve force. Starch and sugar for animal heat.

All the tissues are formed of four final elements, excepting the earthly and saline matters, viz. : Carbon, Oxygen, Hydrogen and Nitrogen. The same is true of all kinds of food, and yet man would die of starvation in a few days, if supplied with only these *ultimate* elements for his nutrition, instead of the *proximate* principles which they in combination produce in organic life.

Experiment shows that vegetable life cannot perfect itself in a soil deficient in the elements which are natural to the plant. It also shows that animal life can be sustained only a short time on food deficient in the elements of animal tissues.

Even animal albumen or fibrine, alone, in the experiments of Magendie, would sustain a carnivorous animal but a few days. Starch, sugar, gum and oil are necessary adjuncts.

On the other hand, starch, sugar, gum or oil, are equally disastrous to health and life when used alone.

As wheat cannot be produced where there is no lime applied to or existing in the soil, so neither bones or teeth can be formed when the phosphates are not in the food.

It is a great error to believe, as thousands do, that starch is THE nutritious principle of food, and that the more of this substance contained in it the better it is.

Starch is an abundant element in all the cereals, which surely indicates its equal importance with other alimentary principles. But its principal use, as before stated, is to sustain the heat of the body, the functions of which cannot be executed without a temperature of at least 95°, and not well less than 98°. Life is extinguished when the whole body loses eight degrees of temperature.

The nutritive effects of food do not depend wholly upon the amount of nutritious elements which it contains, but very much also upon the facility with which the cells are separated and taken up by the absorbents ; upon its porosity, allowing the digestive fluids to act ; and upon its *compatibility* with the digestive organs.

Muscular fiber, which is easily separated, is more nutritious than the white or yellow fibrous tissues. An increased surface for the digestive fluid to work upon, is promotive of digestion. Light bread is easier digested than that which is heavy.

Compatibility depends on the state of health, and on *idiosyncrasy*. Thus food which might be received with pleasure during health, often acts as a poison to the system in disease.

Every one is acquainted with the fact that some persons have peculiarities which compel them to avoid articles of diet, which are not only nutritious but which are to most people luxuries. Some cannot eat a single strawberry without becoming sick. A friend of mine can eat nothing containing egg without being very ill.

Variety of food is well known to be favorable to health. The great diversity of edible products natural to one climate seems to indicate the propriety of making use of them. Man deprived of either animal flesh, the cereals, roots or fruits, for some time, *craves* that of which the system has been deprived. It is natural instinct, and perhaps no better guide can be followed in the selection of food than the natural appetite. Variety stimulates the appetite, whether through the mind, or by direct impression upon the nerves of the digestive organs.

The quantity of food necessary for the healthy maintainance of the body, depends upon its quality and upon the amount of the bodily excretions. Excretions are removed by respiration, perspiration, lactation, urine, fæces.

An *additional* quantity of food is necessary to promote *growth*.

Food containing much water must be consumed in larger quantity than that which is dry. That deficient in its natural proportion of any necessary element, must be associated with that which is rich in the other's deficiency.

Food which is *poor* in necessary elements cannot be ingested in sufficient quantity to make up for its poverty, without seriously impairing the health, or dwarfing some tissue of the body, if persisted in.

Sheep which have been well fed in one pasture and then driven to a

poorer one, exhibit the change in their wool, showing a diminished fiber, at the very point of growth where they left the best feed.—*Transactions American Dental Association.*

A RADICAL AMENDMENT TO THE NEW JERSEY DENTAL LAW.

IS IT FROM ONE EXTREME TO ANOTHER?

The committee of the New Jersey Dental Society having in charge a proposed law creating the title of M.D.S. for those entering the profession through their examining board, have withdrawn that bill from before the legislature and substituted the following, which has just passed, requiring the title of D.D.S. of all commencing the practice of dentistry in that State:

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey*, That from and after the passage of this act it shall be unlawful for any person not now lawfully practicing to engage in the practice of dentistry in the State of New Jersey unless said person has graduated and received a diploma from the faculty of a reputable dental college chartered under the authority of some one of the United States, and that any person hereafter engaging in the practice of dentistry in the State shall within one month after commencing such practice register his name in a book, kept for that purpose in the county clerk's office of the county in which he shall have engaged in the practice of dentistry, giving his name and the name of the dental college of which he is a graduate, and the name of the place in which he shall have engaged in practice, and for which registry the said county clerk shall be entitled to demand and receive from each person registering the sum of fifty cents; and any person violating any of the provisions of this act shall be liable to the penalties prescribed in the sixth section of the act to which this is a supplement.

This is making quite a leap. Dr. J. Hayhurst, who is chairman of their examining board (which will be thus made obsolete), and member of the national examining board, will give us, next month, a defense of this new position of the profession in that State.

Short, Sharp and Decisive.—The Dutch papers mention the discovery of a "certain cure" for gout. A peasant who was confined to his bed by a sharp attack was stung by a bee, and almost immediately he felt better and next day he was quite well. A short time after another patient thought he would try the same remedy, and having induced a bee to sting him on the part affected, he also was cured.

Saving Pulps.—Dr. Fry says: Some eight years ago this question was up, and I heard one gentleman express himself that he did not believe there ever was a pulp saved after it had been punctured and bled. Three days after I was cleaning out a cavity in a bicuspid, and I accidentally wounded the pulp, and, to my horror, drew blood—a real ooze of blood—through the dentine. I felt very badly. I always use the rubber dam, and I am very careful to keep the cavity dry. After wiping out the blood as well as I could, I applied chloride of zinc. It seemed to change the blood a little; it changed the color and seemed to make it lighter. I then used warm air to dry the cavity. There was some considerable sensation, but I was gentle with it. I then took a chloroform solution of Canada balsam; with great fear and misgiving I put the solution in there, then dried that, and then I circumscribed the cavity with it. I gave two or three coats near the trouble. Then I put in a little circular disk of paper—fine paper that had been soaked in this Canada balsam—and dried the whole of it. I filled the tooth with gold, and made the first record that I ever made. That was a little over two years ago. I have seen the lady since three times, and I have searched very carefully for any indication of trouble in the tooth, and I am very much pleased to say that the operation was a success. [A very sensible way. We should have preferred adding a good coat of oxy-phosphate; but we will warrant that tooth for years to come. It is astonishing to us, with so much information on this subject, there are so many who fail in their treatment of exposed pulps.—Ed.]

In the great work of teeth preserving there are four indispensable necessities. The first is separation, for without this there is, there can be, no permanent salvation. The second is the approximal arch, without which, in many cases, separation cannot be secured and continued. The third is appropriate care on the part of the patient, including the use of the tooth-brush, the quill toothpick, the waxed floss and rinsing with water. The fourth, avoidance of acids except as found in fruits, and then in moderation. Solemn and significant for human welfare is this ban against the acids! Teeth are but organized lumps of lime, and acids are their affinity and solvent! There is scarcely a more dreadful expression of the civilization of these times than is shown in the depraved taste and unsatisfied longing for that which disintegrates and destroys the substance of human teeth? Ah! verily, the Moloch of destruction is in our midst! the chemist, the physician, the confection and condiment-makers, while dispensing their acids, are unconcsiously aiding and abetting his disastrous work!—Dr. J. W. Coswel.

It is estimated that 20,000,000 teeth are extracted and 3,000,000 artificial sets constructed annually. What an unnecessary sacrifice, when we consider the vast number which are never replaced and the poor substitutes that are made. The time has been when the surgeon thought he was the best who cut off most fingers and toes, arms and legs, and penetrated nearest to the vital parts of the human frame with merciless cold steel. That day is now past, and the best educated surgeon is he who saves a limb, and restores to usefulness without mutilation. Has not the time come for us to show a parallel improvement in dental surgery? It does not seem quite the thing for men, who have received the liberal education now demanded of dentists, to take their orders from their patients, who are not wise about their denture any how, and whose little stock of common sense is apt to take wings before the pangs of an exposed nerve. No physician would be dictated to by a patient as to whether a finger should be lanced to the bone, and poulticed for a felon, or cut off at the first joint, and so make a speedy end to the throbbing agony peculiar to that species of inflammation.

HYMAN ROSA.

"*The bacteria*, as understood to-day by most botanists," says Professor T. J. Burrill, "consists of unicellular organisms, 'the smallest representatives of animated nature commonly classed as the lowest form of fungi.' The Germans call them 'spaltpilze'—*dividing fungi*—on account of certain peculiarities in their mode of reproduction. When they develop in a liquid in a sufficient quantity they become visible to the naked eye, appearing either as a slight cloud, or gathered in little masses through the liquid, or forming a pellicle on its surface; but the fact of the absence of turbidity in a liquid does not exclude the possibility of their presence. In liquors more dense than water their presence can not be revealed by the naked eye. Sometimes the color some varieties impart to the liquid, although slight and only perceived when a considerable thickness of the liquid is examined, serves to indicate their presence and species. Upon examination of these clouds or accumulations, we find them made up of a multitude of little bodies in the form of minute granules and variously shaped rods, together with algæ and infusorial animals likely to be encountered as inhabitants of the same soil. They severely tax the powers of the microscope for their sharp definition. The larger rods, when closely grouped, require a power of 100 to 200 diameters—while the finer granules require an amplification of 400 or more for their detection".

First, be ambitious to do your work well, then to see how quickly you can do it.

Feed the Teeth.—Let it be ever borne in mind that the vital functions can create nothing. They cannot build up any tissue unless they have the necessary materials from which to build. Assimilation can not occur where there is nothing to assimilate. Yet the materials for building up the constitution may be present in abundance, while the vital forces may not be able to appropriate them. But if the assimilative functions are weakened, they may be able to properly supply the system, provided the needed nutritious elements or materials are abundantly furnished, and thus their action in an effort to build up, or restore the remainder of the constitution, may equal that of the stronger functions which have to gather from an inadequate supply. The children of Jacob, "when in the land of Ham," did not complain of having to make bricks with stubble so much as they objected to the demand of the same tale as when an abundance of straw was furnished. The efforts to gather stubble sacrificed their time and exhausted their strength. And the same may occur with the nutritive functions. They may be overworked by having to build from deficient supplies of pabulum. DR. GEO. WATT.

Until advocates of a theory look into the reasons underlying it, and investigate from a scientific standpoint, the theories of yesterday will continue to be given up for those of to-day. I would like to call attention to one prominent theory of the past which was perhaps more zealously advocated, and practised with as little show of reason as any one we may enumerate. I refer to the so-called Arthur separations. We see its effects only in the mouths of the older patients, and happily it has no defenders of to-day. It was a grand scheme to improve the works of Providence, and although this might be said of the advocates of the extraction of the sixth-year molars, they do not leave physical pain and ruin behind to torture for years. DR. C. J. ELLIS.

Dr. C. F. W. Bodecker, says: I am well aware that in very many cases the effect of the arsenic has apparently not been as bad as might be expected, but on the other hand you may all remember severe cases of local, or even constitutional disturbances, which could not be traced to any other cause than that of a dead tooth which had been treated with arsenious acid. Be all this as it may, the question is certainly in order whether, in view of the serious consequences, we are any longer justified in destroying pulps by the use of arsenious acid.—*Independent Practitioner.*

The prevention of disease is far more to our credit than any skill in curing it.

THE STATES THAT REGULATE THE PRACTICE OF DENTISTRY.

From the best information we are able to gather, and for which our principal thanks are due to Dr. Sillito, the following are the names of the States which have adopted laws to regulate the practice of dentistry, with the dates at which their original laws on the subject were adopted. Some have amended, and a few, if our memory is not treacherous, have almost remade them. It is well known, we believe, that Ohio led off in the movement, and we think it originated in the Cincinnati Dental Society, on motion of Dr. C. H. James. It was our good fortune to be present to hear the original motion discussed on its merits, at its first presentation. As alluded to by Prof. C. W. Wright, at a late meeting of the Mad River Valley Society, there was a disposition in other States, on the part of some, to sneer at the movement. But on witnessing the earnestness of the profession in Ohio, as well as their success in obtaining and executing the law, and especially on noticing that the quacks preferred the climates of States to that of Ohio, they began to think it would be well to follow the good example, till now we find fifteen States whose citizens are protected by law against the increase of dental empiricism. These fifteen are as follows: Ohio, 1868; Georgia, 1872; New Jersey, 1873; Pennsylvania, 1876; West Virginia, 1877; Kentucky, 1878; New York, 1879; Indiana, 1879; Alabama, 1881; Illinois, 1881; Iowa, 1882; Mississippi, 1882; Vermont, 1882; Missouri, 1883; Michigan, 1883.

We are further informed by our friend H. H. Way, D.D.S., of St. Thomas, that Ontario has had a law on the subject since 1868, with an organized Examining Board; and also, that an examination on the preliminary studies, and a pupilage of two and a half years, are required.—*Ohio Journal.*

The effort being made to elevate the dental profession, says Dr. L. C. Ingersoll, is being made in the center when it should be made at the beginning. It is elementary more than medical education that is lacking in our present system of dental education. There is too much made of the question of medical instruction and not enough of that pertaining to the elementary. There are young men who commence the study of medicine who, at the same time, are incapable of writing three or four lines of good English. Go back to the old proverb, that "Mind makes the man," and insist on a good mental acumen, and a sufficient preparatory education, and this will elevate the profession.

Extracting.—The writer well remembers the experience of a Christmas day, twenty years ago, when, almost distracted with toothache, he

applied to the country doctor for relief. He must needs first go to the barn where he kept his turnkey; then after whetting his jack-knife on his boot-leg, he lanced the gum. A silk pocket handkerchief of goodly dimensions was wrapped around the lever, and the murderous key applied to my refractory molar. A dextrous twist of the wrist, and one side lifted,—it seemed like one-half of my youthful cranium—then, leisurely removing the key, and changing the hook to fit the other side, he made a final effort and dislodged the tooth, all for twenty-five cents, and no questions asked.

My brethren, think you there would be as many teeth extracted at the present day, if our patients were obliged to become the victims of a like experience?

HYMAN ROSA.

A Toothache Remedy.—Dr. Millican communicates to the *British Medical Journal* the following, for the value of which in toothache he vouches: "Melt white wax or spermaceti, two parts, and when melted add carbolic acid crystals, two parts; stir well till dissolved. While still liquid, immerse thin layers of carbolized absorbent cotton wool, and allow them to dry. When required for use, a small piece may be snipped off and slightly warmed, when it can be inserted into the hollow tooth, where it will solidify. The ease produced by this simple method is really very great. That is when the pain is from an exposed live pulp.—*Druggists Circular.*

Primitive Dentistry.—Dr. George R. Frederichs, of New Orleans, has a set of teeth which was made in 1825, by Dr. Risseau, of Louisiana. It is an interesting specimen of what dentistry was in its early days. The set is a full one, the teeth being made on a base constructed from a tusk of hippopotamus. The biscupids and molars are of the same material, the incisors of the old French make of porcelain, called the French bean, because of their being of one shade and color. They are backed by gold, and fastened to the base by rivets. The upper and lower set are joined together with a spiral spring. It is said they were worn with perfect comfort during the patient's lifetime, a period of thirty years, according to a statement made by a daughter of the lady for whom the teeth were made.

Aqueous Shellac Varnish.—Saturated solution of borax, two parts; powdered shellac, one part. Shake together without heat. The shellac will dissolve in two or three days. This can be used for a starch gloss also.—*Pharm. Centhralle.*

AMERICAN DENTAL EDUCATION.

"The defects apparent in the American system of Dental Education," was the theme of a discourse of C.W. Elliot, L.L.D., President of Harvard College, some time since. He said that the development of the dental profession in the seventy years of its existence in the United States had been remarkable; but as the development of a profession requires centuries, dentistry could not be expected to possess all the safeguards from injurious influences which have been attained by older professions. The progress of dental science in this country not only has been extraordinarily rapid, but, on the whole, satisfactory; and the causes of this, the orator said, were the American inventive genius, the hospitality of the American mind to novelties, and the soft, unphosphatic diet of which Americans are fond. Besides this, every cultured American visited a dentist twice a year, while an Englishman only went when his tooth pained him. The former sought relief for future time, the latter for the present.

Is there real ground for the anxiety which exists for the improvement of the status of the profession, and especially dental education?

From the great increase in the number of dentists and of patients, the increase in periodical literature and standard works, and the increase in the organized means of education, he thought there was real ground for that anxiety which manifests itself at the present day in dental literature and discussions.

The improvement must be brought about in a great measure through the organized means for the education of the profession. Our dental schools demand no preliminary examination, while those of England require several university examinations; and this simple fact will in time determine the superiority of the profession in England.

He urged the profession to emulate the zeal of the medical profession in its research and scientific study, and also in its noble example of gratuitous practice. He advised the necessity of strict professional etiquette in dealing with patients of other practitioners, and spoke of the value of associated action of the profession in the common pursuit of common knowledge, and of the value of recorded experience and observation as a help to those coming after, and above all he placed the three aids, research, teaching, and gratuitous labor, as establishing and ennobling the profession.

Prompt Cure of Ringworm.—R. W. Taylor, M.D., in the *Journal of Cutaneous Diseases*, reports the best results from the use of a paint composed of a tincture of myrrh and four grains to the ounce of bi-chloride of mercury. Other skin affections are cured by the application of this remedy.

Carbolic Acid.—I will venture the assertion that the great majority of all pulps saved have been treated with pure carbolic acid. The therapeutic properties of creasote and carbolic acid are about equal. Creasote is a rare drug, while carbolic acid is easy to prepare from the coal tar, and the creasote, so called in the drug stores, is a solution of carbolic acid. In referring to Wood's Therapeutics and Toxicology, he gives almost a page of reference as to its use in inflammation, and refers to a German writer's experience in a thousand cases of deep-seated inflammation. Before a meeting of the Pennsylvania Association of Dental Surgeons last December, one of the members introduced his subject of success in treating exposed pulps with pure carbolic acid, by calling attention to the clinical lecture of Dr. R. J. Levis, of the Pennsylvania Hospital, whose method of treating serous cysts, for instance, a hydrocele, was the first to evacuate the contents of the sac and then inject two drachms of deliquesced crystals of carbolic acid, and close the mouth of the wound with adhesive plaster. A feeling of warmth follows, but no pain, and no subsequent inflammation and forming of pus, which must escape or be absorbed, thus differing from iodine, which would produce inflammation and pus. We call attention to the above as strongly supporting the common theory of the use of strong carbolic acid by dentists, for if two drachms of deliquesced crystals can be injected into a closed sac, as above, and no inflammation follow, it is common sense to say that it does not produce inflammation. DR. C. J. ELLIS.

Dentists have often complained of popular ignorance concerning the teeth, and have taken pains to educate the public. But I discovered the other day that the schoolmaster is abroad with all the modern improvements, and we may presently be going to school to our patients. It was in this wise: An uncommonly bright school girl of twelve or fourteen years, having just left my chair, looked into my face with her eyes full of a sweet seriousness and asked: "Doctor, have I such teeth as bacteria readily devour?" And certain symptoms of amusement on my part were not received with favor. Very truly yours,

J. SMITH DODGE, D.D.S., in *Independent Practitioner.*

To make ordinary solder, such as is used for tin work, stick to cast and wrought iron, also the best way to tin a solder iron.—To muriatic acid in a glass jar give as much of zinc chips or filings as the acid will take up. File or otherwise brighten the cast or wrought iron, apply the acid with powdered resin and the hot soldering iron with common solder or pure tin. Tin a soldering iron (or copper) by heating it, rubbing it on a brick to brighten it, and applying the acid and resin as before, with solder.—*Scientific American.*

DIAGNOSIS—ITS IMPORTANCE.

[Editorial in Ohio Journal.]

What's the matter? That's the question. And success or failure turns on a correct answer, in the practice of dentistry as well as of medicine. Our observation as a physician leads us to believe that a majority of patients are treated while the physicians lack clear views as to their diseased conditions. Our advice to all young dentists, as well as physicians, is to give close, earnest, persevering attention to diagnosis. Set your hearts on knowing the exact state of your patients' constitutions. Till you *know*, you are not ready to *do*. You have no right to treat diseased conditions by guesswork, because health and perhaps life is at stake.

But it is not our purpose to give a general nor a didactic treatise on the subject, but to speak at random, mostly in the way of suggestion, hoping that some reader may be thereby awakened to increased interest in diagnosing disease.

We suppose physicians are sometimes surprised, and possibly amused at our mistakes in diagnosis. We certainly can return the compliment in reference to many conditions of the oral cavity in which they are astray.

A physician often becomes alarmed at what may result from an alveolar abscess. Often have physicians called our attention to a fistulous opening in the gum, now absolutely painless, and discharging so slightly, as to cause little if any annoyance. They have, time and again, brought such patients to us to have the corresponding tooth extracted so they could apply appropriate treatment to the necrosed maxillary bone. The tooth being both comfortable and useful, of course we would decline to extract. "But think of the necrosis!" they would urge. And when told that if the case became troublesome the tooth could then be extracted, and all would be right, they nearly always seemed incredulous and still dreaded the necrosis. Their trouble resulted from thinking that the necrosis was confined to a small spot on the alveolar process, and was in no way connected with the maxillary bone proper, and that after extraction the entire process would be absorbed, and the necrosed spot undermined and carried away. Many laymen and women have come to us frightened at what their physicians had told them of the danger of these small fistulous openings.

Some time ago the *St. Louis Medical Journal* reported a case of this kind where the dean of a medical college mistook the little protuberance at the outlet of the fistula for a cancer and treated it accordingly, till the parties, becoming discouraged by his failures to cure; the case passed to a dentist, who extracted the tooth, and "let the cancer get well."

We have been told of a serio-comic case of this kind, which occurred less than a thousand miles away. A middle-aged man had his mouth prepared for full artificial dentures. Some months afterward he discovered a small hard tumor on the lower ridge. He was alarmed and showed it to his friends, who advised him to have professional counsel in reference to it, each and all of them recommending Dr. W. With fear and trembling we went to the sanctum of Dr. W., who looked inquiringly into the mouth and then looked wisely at nothing, shook his head gravely and pronounced two monosyllables through his nose. "Is it a cancer, Doctor?" said the frightened patient. "I wish to God it were," said the grave doctor. On inquiring if it could be cured, and finding out the large retaining fee to be paid in advance and the necessity of getting a substitute in business for an indefinite period, the poor man went to report to his employers the state of affairs. One of these was unwilling to believe the case so serious, and insisted on going with him to his family dentist. This one, as soon as at leisure, looked in the mouth and said there was nothing dangerous. "Can you cure it?" eagerly asked the patient. Without replying the doctor took a root forceps and removed the anterior root of the first molar, which had broken off when the extracting was done. This man paid him a dollar, and resumed his place in the counting-room. Was there a mistake in diagnosis in this case? Or was there a reaching out for a big fee? Let us charitably think the former.

Many times, benign tumors on the gums are mistaken for scirrhus or other malignant growths. Miss S., aged 35, had a tumor over the hard palate, a little to the right of the median line, and about the size of a pea, when she first noticed it particularly. It grew till it so filled the mouth that she could scarcely take nourishment. She was several years in the hands of "cancer curers," and finally came to us. The tumor was removed by incision, the operation being almost painless; and the hemorrhage, though brisk at first, was readily controlled by pressure and styptics. An exostosed root of a bicuspid tooth was found at the bottom of the tumor. It would be hard to estimate the degree and amount of mental anxiety to say nothing of the physical suffering, resulting from the mistaken diagnosis in this case. We have seen several cases very similar to it in their history and outcome.

On the other hand malignant growths may be taken for benign. In the winter of 1866 and '67, Mr. —— from Kentucky, came to Cincinnati to consult us and the late Prof. James Taylor. A tumor involved the central portion of the superior alveolar ridge, extending as far as to the first bicuspid teeth. We diagnosed the tumor as benign, and removed it, cutting out to the bottom of the sockets. The case progressed nicely, and healed readily and rapidly, except at a point the size of a pin-head. He had this excised by his family physician, but

the result was not favorable. In a few months he called on us with well developed cancer of the parts, and beyond the reach of an operation, as we decided, our decision being confirmed by both the eminent surgeons, Prof. Thomas Wood and W. H. Mussey. It is quite probable there were malignant germs when we first saw the case. Even if they were present, it is probable that the operation gave more promise of prolonged life than any other treatment; yet we felt badly over our probable mistake in diagnosis.

When dental science shall have reached the proper degree of cultivation, and the dentist looks at a specimen of dental caries intelligently, he will know at a glance the exciting agent, will understand the probable predisposing circumstances, will know whether the decay is progressing rapidly or slowly—in short, he will know a great many things of which he is now ignorant, among these he will know what treatment or course of living is required to break up the tendency to the form of decay existing in the case.

A new base for artificial teeth composed of 16 parts pure tin and 1 part bismuth is proposed by Dr. N. W. Kingsley. It flows at the low temperature of four hundred degrees. The matrix he pours it in is composed of sea-sand and plaster, in which the teeth, as arranged, are imbedded. It is said to be very beautiful in appearance and as little liable to discoloration as gold, and is easily repaired. If plain teeth are used the gums and contour of celluloid or pink rubber is easily added.

Gold crowns are made by Dr. N. W. Kingsley, of New York, by first fitting a ferrule-like band around the tooth to be enclosed, taking care to have it extend beneath the border of the gum, and clasping the tooth snugly. With this band adjusted, and the open part filled with wax, a "bite," or impression, is taken of the grinding surface of its occluding companion, then a cast poured, from which a die is made for swaging or punching out a cap, which is fitted and soldered to the band. The completed crown is secured to the natural organ with a stopping of oxy-phosphate of zinc. A small hole should be drilled through the gold crown before the final adjustment, to permit the excess of filling to escape.

To Remove Water from Alcohol.—If gelatine be suspended in ordinary alcohol it will absorb the water; but as it is insoluble in alcohol that substance will remain behind, and thus nearly absolute alcohol may be obtained without distillation.

HOW DOES BONE GROW?

It is generally thought that bone grows by the enlargement and multiplication of interstitial spaces. As a proof of this, we are referred to the close and fine texture of the bone of the young, and to its coarseness and honey-comb appearance gradually taking place by age. Carl Heigman, M.D., of New York, seems to demonstrate that "a great part of the skeleton grows from fibrous connective tissue, independently of preformed cartilage." He says: "The strict distinction which in former times was made between 'cartilaginous' and 'covering' bones can be upheld only to a certain extent. It is true that in the production of covering bones no preformed cartilage participates, yet all the other bones of the skeleton, including the flat, the short, and the shaft-bones obtain only a part—viz., their cancellous portion, from preformed cartilage. Their cortical or compact portion is formed entirely from periosteum. Many observers have noticed in different places beneath the periosteum, cartilaginous layers; but no importance need be attached to the presence of such a layer, as the formation of bone tissue is materially similar, whether it is developed from cartilage or from fibrous connective tissue."

"Obviously, the originally formed bone-tissue is not permanent. The bony trabeculæ in turn are repeatedly reduced by liquefaction of their substance to the embryonal or medullary condition, and new bone-tissue continues to form up to the time of full development of the body. A continuous absorption and reformation of bone is probably going on throughout life. This, to some extent, is influenced by certain conditions—for example, on the skull-bones by the growth of the brain, both in a progressive and regressive way (Virchow). The regression is shown by the absorption in advancing age, producing the thinning of the bones so characteristic of the senile skeleton.

"In the light of my researches, continued for ten years, the theory of an interstitial growth of the bone is no more tenable than is the interstitial growth of any other tissue. Basis substance, once formed, cannot increase in bulk by simple expansion. The observation that the bone corpuscles in the old are farther separated than in the young is no proof of an interstitial growth, since Steudener has demonstrated that the peripheral portion of each bone-corpuscle in advancing age is transformed into basis-substance. *New tissue forms exclusively from embryonal or medullary tissue, and an already formed tissue must return to its embryonal condition, by liquefaction of the basis-substance, before a new tissue can arise. An augmentation of the bulk of a tissue can take place only by new formation of the living matter of the embryonal corpuscles; that is, an increase of the number of the embryonal corpuscles.*"

THE RUBBER DAM, IN REMOVAL OF TARTAR.

ED. ITEMS:—The rubber dam has proven of great value in my hands as an assistant in removing tartar. The dam should be applied as in filling, only the holes should be punched far enough apart so that when the scalers are passed under the gums the rubber can be carried up with the scalers and not be pulled away from the adjoining teeth. The advantages of the rubber dam are that fully half of the length of the roots of the teeth can be exposed to the sight, and the small, thin, smooth particles of tartar that otherwise might be left can be thoroughly removed. It also excludes the blood and saliva, and somewhat lessens the pain. Tie the dam, only enough to keep it from slipping off. It will be of most value in removing tartar from the lower front teeth.

G. R. TAYLOR, Streator, Ill.

ED. ITEMS:—Last November J. G., aged 30, presented himself, with a troublesome first superior molar. On examination I found the pulp dead, except about one-third in the palatine root. After cleansing as thorough as possible, I saturated pledgets of cotton with hydrastis, passing it into root canals, and closed the crown cavity. In three days, on his return, I was surprised to find the pulp had grown and filled the canal of the palatine root. Regarding it as a fungus growth, I applied arsenical paste. I would like to know if this is not a singular case. Yours respectfully, J. A. SMALLEY, NEWARK, O.

The fraud of the "Wisconsin Dental College" is most thoroughly exposed in the *Independent Practitioner* of May. We called attention to this matter some time since. Most dental journals have done the same. How the authorities of Wisconsin allow it to remain in force is a mystery. Why does not the dental profession in that State see that it is wiped out?

The number of graduates of the following dental colleges, or dental department of colleges, during their past session, were as follows:

3	Baltimore College of Dental Surgery	42
6	Ohio College of Dental Surgery	21
2	Pennsylvania College of Dental Surgery	64
1	Philadelphia Dental College	65
4	New York College of Dentistry	42
10	Missouri Dental College	6
9	University of Tennessee	12
11	Vanderbilt University	6
7	Indiana Dental College	20
5	University of Maryland	36
8	University of Iowa	13
		327

Editorial.

THE GREEN OR BROWN STAIN UPON TEETH.

This condition of the teeth is always an evidence of long neglect, and it is the foundation for the most serious class of tooth-decay. We have seen young children's teeth entirely cut through by it, and the exposed nerves, or the ulceration consequent upon their destruction, the cause of the most dangerous convulsions, conjestion of the brain, and other febrile disturbances, which often prove fatal. It begins on the enamel next to the gum, and spreads over nearly the whole of the labial surface of the tooth. It produces first a loss of polish, then a peculiar roughness ; this is followed by the destruction of the animal portion of the enamel and consequent chalkiness, deeper and deeper, till the dentine is reached, when the erosion is still more rapid, till the tooth is destroyed. The disintegration may be quite extensive without manifesting itself on the surface. That is, there may be no evidence of its being more than a green or brown stain. But when this is cut away, the chalkiness appears, and perhaps much of the tooth is removed before a solid foundation is found.

This stain upon the teeth, and consequent devitalization and disintegration, may most always be avoided by cleanliness. We have never seen a case of it where the brush with even simple water has been properly used.

The cause is generally attributed to an acid condition of the mouth ; at any rate, of that portion of it where this trouble is found. Undoubtedly acid has much to do with it, though it is not so clear how an acid should thus remove the animal portion of the bone and leave the lime-salts ; for emersing a tooth in acid causes just the opposite effect ; and we have certainly observed this stain where acid would not seem to have had much, if anything, to do with it.

This disease is more frequently seen in the teeth of children than of the aged, and of small children, than those of larger growth. This shows the necessity for the use of the brush, even with little children.

If it is not attended to in its incipiency, the brush will not obliterate it ; a little chalk, or chalk and soap will materially assist. But if the enamel is much roughened, especially if the stain is so persistent that it seems necessary to scrape the surface, the patient should be submitted to the care of a dentist.

And what shall the dentist do ? To scrape it off will be a permanent injury to the teeth, and will fail to arrest the disease. Judi-

cious, but thorough polishing with Arkansas stone, or very fine pumice, should be resorted to, and the patient instructed to keep it polished by the thorough and frequent use of a brush. A brush with water is genarally sufficient, but the addition of chalk and soap should be used if necessary.

Sometimes the erosion has gone so far it cannot be polished off; or, if the stain is removed, it will be found soft and chalky underneath. But even this may not necessitate a filling. Often, though, so much has to be cut away that quite a depression is made, yet by polishing this surface thoroughly, decay may be permanently arrested; though, of course, this supposes that the patient co-operates by the use of the brush.

But there are cases of this kind which have progressed so far that pockets, and perhaps deep cavities are formed which must be filled. What shall be the material? Is gold always the best? Most assuredly not, especially in immatured teeth, and with young children. Oxy-phosphate is better, both to arrest the disease and harden the enamel.

Any fillings in such teeth are generally temporary work. In three or six months they should be examined, and probably refilled. This may have to be repeated two or three times, though at each sitting there will be found an improvement in the condition of the teeth. Finally, gold or alloy may be used. Better, however, to be obliged to fill several times with oxy-phosphate or gutta-percha, during the maturing of the teeth, than to expect a permanent exemption from the decay too soon.

This condition of the teeth, however, must not be mistaken for that other class of erosion found in older patients, where the surfaces of the teeth are not stained but bright, not roughened but polished, and not soft but exceedingly hard, and where the furrows seem to be made entirely by the excessive use of hard brushes and gritty dentrifices. In this class of cases, the injudicious use of the brush and grit has caused a recession of the gum so as to expose to their harsh action that portion of the tooth where the enamel ends and the cementum begins. Here the softer dentine is easily reached, and along this tract the furrows are made. We have seen whole sets of teeth so spoiled in this way that nothing but extensive and very thorough plating with gold has been sufficient to save them.

Peroxide of hydrogen is becoming quite popular as a mouth-wash, and as a general cleanser of the oral cavity. It is also excellent to bleach pulpless discolored teeth. In the treatment of alveolar abscess, and in Rigg's disease it is highly prized by some of our most successful dentists.

BRAIN FORCE AND CAPACITY.

Brain force and capacity is not always indicated by its size. Webster, Napoleon, Cæsar and many other great men had great heads, and so have many intellectually weak men had large brains. Dr. E. C. Eastes, of Buffalo, mentions a negro, recently hung, whose brain weighed more than 70 ounces,—surpassing the weight of any of our great men—yet he had shown no evidence of special intellectuality.

The proportion of brain to the rest of the system is quite a gauge to intellectual capacity. If the amount of brain found in an elephant was in a monkey, we should look for great things from the monkey, but in the elephant we do not expect it to show any special brilliancy; so, if we found the amount of brain seen in a large man, in the head of a very small man, we should expect remarkable power, but, where it is, it elicits no special comment.

Undoubtedly the best criterion is quality. A brain of coarse texture, which has generally but few convolutions, and comparatively few nerve cells, is sluggish and lacks capacity, though it may be large; and one of fine texture, which is generally remarkable for its numerous ramifications, convolutions and nerve cells, is active, strong and capacious.

But, again, what do we mean by nerve force and capacity? One animal may have remarkable capacity for some things and, another for other things. In their special sphere they may surpass the capabilities of man. So among men: one man may show remarkable wisdom in one direction and another in another direction, while each, in all other directions, may be very ordinary men. Very few are great in everything. He shows greatness, who, in any department, is a thorough master of his position; and the more intellectual that position is, and the more force and capacity he displays in that position, the greater he is, whether in trade or mechanics, the arts or the sciences, physics or metaphysics, though he be an imbecile in some things.

The splitting open of a tooth by pressure of pent up gas is reported by Dr. S. C. G. Watkins, of Mont Clair, N. J. Such cases are rare, but not incredible. Sometimes the gas generated during the dissolution of the pulp of the tooth must be very great, and if it receives no relief the pressure against the walls may be sufficient to cause rupture of the tooth. There are cases on record where the force was so severe that an actual report is said to have been heard.

"*There* is nothing very brilliant about our Bremen dentists," said a lady to a member of the profession in Berlin, "but they are very obliging. If you wish a tooth extracted with gas, they forthwith light the chandelier.

LIFE INSURANCE.

Prudent provision for the future is the foremost characteristic of true wisdom. Tender love for those depending on us prompts to the same duty. In fact, even in many animals, instinct shows this wonderful impulse.

We may be engrossed in the gratification of pampered appetites, be lulled into indifference by their over-indulgence, and become selfish by their constant demands, but if we have a spark of humanity within us, we shall ever and anon wake up to the duty of providing for the future safety of our loved ones. The more sensibly we feel that we are their stay and support for present necessities, the more keenly shall we realize that they are leaning hard on us for their future happiness. The thought that at any moment, they may be cruelly prostrated, like the tender vine deprived of its support, should be a warning to us.

We may walk with a staff in our hands that has vitality, which, by the very act of our fall, will be planted firmly in the view of our loved ones, to spring up as by magic into a beautiful and fruitful tree. Though we are gone, this is left as a token. It shows we were mindful of their interests to the last.

This magic staff is Life Insurance. While we live it is an ornament of grace which causes us to walk more proudly. When we die, it is a maintenance and a shelter.

No one can exempt himself from work. It is a decree universal that we must work. The only choice left us is, shall it be voluntary or involuntary? Shall it lift us into a sphere of honor and independence, or degrade us to the beggarly condition of necessity and drudgery? Shall we be its master and call it to our aid at our pleasure, keeping it in a subordinate position, as we do other servants, or shall we be its slave, to follow it without choice and serve it without restraint?

But the choice does not depend so much on our will as on our character; and the result of our work is more the consequence of the nature of that work than of its severity. Is it simply of the muscles? Are we only a machine, working without thought, acting only as we are acted upon? Then, like a machine we shall be kept in good order only as it is to the interest of our owners, and, when worn out, set aside for another.

To do work that a machine cannot do, nor a dumb brute, nor a thoughtless man, must be the object of the master who would command his position. The man of intelligence lifts work out of the province of serfdom and enthrones it amidst the beautiful things of his heavenly ideal. He honors it as the chief among his treasures, and he uses it as the means of lifting himself into honor, independence and true enjoyment.

But the motive impelling our work has much to do with its value, even to ourselves. Is it simply to aggrandize our position? Then that position will never satisfy our longings. If our object is our own selfish ends, selfishness will thwart our object. It must be philanthropic.

Therefore, to get the largest benefit from labor, it must be voluntary, intelligent and benevolent.

Good manners, as well as skill, are necessary to success, especially in our profession. Dentists must be gentlemen; the fondling flattery of the maudling sycophant, the coarse ways of the uncultured boor, and the vulgar freedom of the contaminating sensualist, have no place in the dental room. Purity, disinterested sympathy, refinement, cultured intelligence, and the grace of moral worth receive homage and give unconscious power that are among the chief elements of success.

Passing gold foil through the flame while filling a tooth is a poor way of making it cohesive. It can be prepared by the manufacturer much better. We have heard of dentists trying in this way to improve even cohesive gold. It must be a very poor cohesive gold to be made better in this way. It is impossible to prevent its being hard, harsh, and badly adapted for a close, solid filling. Gold may now be bought so thoroughly cohesive that it cannot be made more so by the dentist without making it too hard for use. Some cohesive foils are hard when they come from the manufacturer, but there are others very soft and velvety. Some dentists suppose that a foil loses its cohesiveness by age. This is not generally the case, unless it is brought in contact with the fumes of hartshorn or camphor, especially of ammonia, they must be quite strong for either to effect it, or subjected to moisture. While in practice, we bought our crystal gold by the ounce and found it, when six months old, as good as when new.

What disintegrates oxy-phosphate fillings? is a question worth an intelligent answer. It is generally supposed to be an acid condition of the mouth. But how can an acid so act upon the oxy-phosphate as to destroy it? It is the union of an acid with the zinc which gives it its strength. This cannot be neutralized by another acid. A good oxy-phosphate should be neutral to both acid and alkali, but if disintegration does take place it will generally be from an alkali. Mix up a marble of Welch's Oxy-phosphate and emerse it in an acid or an alkali and see the result.

The force neccessary to pack gold foil is not so great as generally supposed. Very frail teeth may be nicely and permanently filled, if low numbers of cohesive gold are used—say 4 or 6—and it is carried in a loose state to the cavity, and pressed comparatively lightly to its place. It is the heavy foils which necessitate so much pressure. This thin foil may be used two, four, eight, or even twelve leaves thick, and yet be easily manipulated. Lay them upon each other and cut them into narrow ribbons, and these into short pieces, while between two leaves of the gold book. You will thus have packs varying in thickness and size to suit the cavity. They are better than the cylinders found in the market. Though these packages may contain in thickness more than the amount of a single piece of a high number, they will not be so difficult to work. Some may be afraid that, in this manifold form, the inner layers will not sufficiently cohere. Try an experiment! after folding and cutting as above, lay a piece of glass or board and merely press the flat surface of your thumb nail on it, and see how tenaciously the inner layers will be cohered. If your foil is soft, and has the proper cohesiveness (for we have foils which possess both these qualities) you will be astonished to see how inseparable will be all the leaves. A flat, pointed instrument is not the best to use. Let it be oval, and slightly, finely, and shallowly serrated; and then, as the piece is laid in its place, give the instrument a rocking motion. It will lie so quietly and hug to its bed so snugly, you will find it difficult to disturb it; and as piece after piece is thus added you will find you have built better than you thought; it will be a solid mass. You need not be afraid to contour even to the original shape of the tooth, and it will take a fine, hard, durable polish. Prof. Thos. Fillebrown, of Boston, adheres to this process of filling cavities altogether, and his success has been remarkable. He uses no mallets. He may be said to have largely originated the process, and we will have some of his points on sale. Ho prefers cutting the manifold ribbon wider than we have indicated—say a fifth of the width of the sheet—and then rolling it into a rope to be taken as a whole length to the cavity, or cut into shorter pieces, as convenient. He does not pass it through the flame, but simply over it to dry it. A good cohesive gold does not need a high heat before using—this injures it by making it hard and harsh.

In taking plaster impressions for partial sets it is sometimes impossible to remove the plaster from the mouth without breaking up the impression. The operation in such cases will be expedited by oiling the impression cup, so as to be able to remove it easily and thus get at the plaster. A little practice will then enable the operator to so break it up as to put it together accurately out of the mouth.

A uniform standard of graduation at our dental colleges has long been desirable. There is now an effort to bring this about. No doubt it will result not only in a uniform, but also in a higher standard. Let us hope that one of its features may be the prohibition of the use of tobacco. If it must be tolerated in the generation of dentists now passing away, let us see that the next is free from this objectionable habit. If there be a moral qualification also, it would be a good thing.

The second edition of *Caulk's Dental Annual* is now out.—Address, L. D. Caulk, D.D.S., Camden, Del. Price, 25 cents.

The South Carolina State Dental Association meets at Spartanburg, S. C., on second Tuesday (8th) of July.

Vulcanite and Celluloid are the subjects of a little book of 116 pages, by S. E. Gilbert, D.D.S., of this city. Price, 75 cents. This is a valuable treatise for students, and many dentists who are sometimes puzzled with the behaviour of these materials.

In vulcanizing, it is better to use but little water, just enough to ensure continuous steam. The rubber will be of better color and quality than when the flasks are covered with water.

The poisonous snakes of America are only three in number—the rattle-snake, the copperhead and the mocassin. There are a few others give a somewhat venomous sting, under certain circumstances, but which are not considered dangerous. And yet, who is not afraid of a snake? Who has a good word for any of them? This prejudice and fear are almost universal. Their "venomous tongue," though as innocent of any sting as a baby's, is avoided as the approach of death, and the least sound of their anger as the fiery hissing of the devil.

"*Crown and Bridge Work*," by Dr. J. L. Williams, New Haven, Conn., is quite a respectable pamphlet, setting forth the claims and process of this class of work in an attractive form. Dr. Williams has evidently successful experience in this department.

Patients who are very particular are sometimes blessings. They stir us up to greater exertion, and make it absolutely necessary to do our very best.

The Illinois Transactions are a credit to the State. It gives unmistakable evidence of the rapid strides of the profession in that State.

Miscellaneous.

PRESSURE AT GIVEN TEMPERATURE IN VULCANIZING.

Temperature, Fahrenheit.	Pressure Per sq. inch.	Temperature, Fahrenheit.	Pressure Per sq. inch.
212	0	297	50
240	10	307	60
259	20	316	70
274	30	323	80
280	40	331	90

Melting Point of Metals.—Tin, 420 degrees; bismuth, 497 deg.; lead, 812 deg.; zinc, 773 deg.; cadmium, 442 deg.; silver, 1860 deg.; copper, 1996; brass, 1869 deg.; gold, 2016 deg.; cast iron, 2786 deg.

Brass Finishing by Acids.—Many articles of brass cannot readily be finished by the file or by abrading substances, owing to the intricacies of their surfaces. Especially is this true of brass castings of an ornamental character. But a most elegant finish can be obtained by means of acids, which may be protected, if desired, which may be protected, if desired, by means of a lacquer or varnish; the acid finish, however, is generally preferred without the addition of a varnish.

If the work to be finished is greasy, it should be cleaned by heating and dipping in acidulated water—vinegar and water, or washing soda in water—and then in clear water. The finishing bath may be either nitric acid two parts, water one part; or one part sal ammoniac, one part sulphuric acid, one part nitric acid, one part water; all by measure and the sal ammoniac to be dissolved in water until a saturated solution is obtained. The articles should not be allowed to remain in the acid more than ten seconds, then taken out, plunged into clear, cold water, thence into hot, soapy water, and dried in hot sawdust.

Nickel Plate not Poisonous.—The *Lancet* says that it is satisfactory to know that there is no danger of poisoning from the use of nickel-plated vessels or instruments. Schulz experimented with the acetate on dogs, and found that in doses of seven grains until about 160 grains had been given, it acted most beneficially as a tonic, and no ill effect whatever followed.

Dandruff Wash.—Ad. Vomaca recommends the following wash for dandruff: Borax, 15 parts; glycerine, 30 parts; decoction of soap bark root, 50 parts; made up with water to 300 parts.

In the morning rub the hair with a pomatum of: Tannin, 2 parts; tincture of cantharides, 5 parts; Vaseline, 50 parts; balsam of Peru, 5 parts; oil of mace, 2 parts.

The latest ingredient, the odor of which is objectionable to many persons, but is an excellent preventive against the falling out of the hair, can be mixed with vaniline, whereby its pungent odor is disguised.

Pleasing Experiments with Glass Tubes.—A most remarkable phenomenon is produced in glass tubes placed in certain circumstances. When these are laid before a fire in a horizontal position, having their extremities properly supported, they acquire a rotary motion round their axis, and also a progressive motion toward the fire, even when their supports are declining from the fire, so that the tubes will move a little way upward to the fire. When the progressive motion of the tubes toward the fire is stopped by any obstacle, their rotation still continues. When the tubes are placed in a nearly upright posture, leaning to the right hand, the motion will be from east to west; but if they lean to the left hand, the motion will be from west to east; and the nearer they are placed to the upright posture the less will the motion be either way. If the tube be placed horizontally on a glass plane, the fragment, for instance, of coach window glass, instead of moving toward the fire it will move from it and about its axis in a contrary direction to what it had done before; nay, it will recede from the fire, and move a little upward when the plane inclines toward the fire.

These experiments succeed best with tubes about 20 to 22 inches long, which have in each end a pretty strong pin fixed in cork for their axis.

Glycerine Soap.—A glycerine soap should contain at least ten per cent of glycerine. As the latter is very beneficial to the skin, some manufacturers will probably be anxious to make a soap which really deserves the name. The following method is used in making glycerine soap in North Germany. The product is very fine and agreeable to the skin. For coloring it, a few grains of uranium orange may be used. The receipt is as follows: Tallow (fresh and free from acidity), 18½ pounds; lard, 18½ pounds; cocoanut oil, 8 pounds; talc, 2 pounds; lye, 38 deg. B., 22½ pounds; glycerine, 6½ pounds; oil of bergamot, 130 grams; oil of orange, 70 grams; oil of bitter almonds, 30 grams; oil of ivaranchusa, 5 grams. The talc is stirred into the oil; as soon as the latter is cooled to 45 deg. C., the lye is added; the remainder of

the process is the same as in making ordinary cocoanut-oil soap. This soap is cut into bars weighing one-half and one-pound, wrapped in white paper and packed in tin foil.

Cigarette Smoking.—There has been introduced into the New York Assembly a bill which prohibits the sale of cigarettes or tobacco to minors under sixteen years of age. A law to that effect already exists in New Jersey, and its example might advantageously be followed in other States.

In regard to the results of cigarette smoking, physicians say it affects seriously the functions of the stomach, especially in the young. It has a tendency to increase the action of the heart, causing a palpitation. It is a fruitful source of indigestion. It has a decided tendency to produce catarrh in the head. This, it is said, arises from the fact that a cigarette being much shorter than a cigar, more of the smoke finds its way into the mouth and nasal organs, a very much larger percentage of smoke being inhaled by the smoker from a cigarette than from a cigar. Cigarette smoking, it is averred, has also a decided tendency to produce asthma, and renders the system more liable to the attacks of pneumonia and bronchitis. In its effects upon the nervous system cigarrette smoking is said to be in the highest degree pernicious, both directly and indirectly. It destroys healthy appetite for solid food, and by the constant expectoration it produces leads to a morbid craving for drink. Injury or destruction of the nerves of the eyes, it is alleged, has been in hundreds of instances produced by cigarette smoking.

What Smoking Does for Boys.—A medical man, struck with the large number of boys under fifteen years of age he observed smoking, was led to inquire into the effect the habit had upon the general health. He took for his purpose thirty-eight, aged from nine to fifteen, and carefully examined them. In twenty-seven he discovered injurious traces of the habit. In twenty-two there were various disorders of the circulation and digestion, palpitation of the heart and a more or less taste for strong drink. In twelve there were frequent bleedings of the nose, ten had disturbed sleep, and ten had slight ulceration of the mucous membrane of the mouth, which disappeared on ceasing the use of tobacco for some days.—*British Medical Monthly.*

Rapid Eating.—In all probability the great prevalence of dyspepsia in this country is in no small degree owing to the habit of rapid eating, to which we, as a nation, are addicted. Dickens and other foreigners who have visited this country have observed this habit. I have conversed with many Americans who have traveled in other countries,

and they all agree that Europeans generally take more than double the time at their meals than is our habit in this country. Now, the teeth are created for the purpose of mastication, and their form and texture indicate that they are intended for the comminution of hard substances—a function they are very rarely called upon to perform in these days, when much cooking and soft food seems to be all the demand. Therefore, I think I am safe in saying that the insufficient use of the teeth is a cause for dental caries. I can see no reason why teeth that are well formed should decay, and I believe they would not to any extent if they were properly used. We all recognize the law of development by proper functional activities. The gymnast and the hardy sons of toil, with their strong frames, hard muscles and calloused hands, are examples of the manner in which the tissues are made to assimilate the pabulum and bring them up to the point of resistance. If this is law in the other tissues of the body, why does it not hold good in the teeth? Are they not vital organs, furnished with vessels for an abundant supply of nutrition? C. FONES, D.D.S.

Sleep.—Sleep is to the brain what rest is to the muscles. Sleep is a craving more importunate than hunger. Among some of the ancients deprivation of sleep was used as a punishment. This cruelty was inflicted by the Romans upon Perseus, and the Carthaginians deprived Regulus of his eye-lids in order to make him so far sleepless.

There are three kinds of sleep. First, natural; second, pathological; third, artificial.

The length of time that should be devoted to natural sleep it is not easy to determine. A maxim of the school of Salermo runs thus:

"Rise at six and eat at ten,
Eat at six and bed at ten;
Ten times ten years
You may live then."

A child spends more than half its life in sleep. An adult should spend one-third of his. The aged sleep but little, though in extreme old age the habit of infancy often returns.

Girls and women require more, but generally get less than men. An hour's sleep before midnight is worth more than an hour after midnight. Saint Francis, of Sales, used to say that "Early rising preserves health and holiness."

Insomnia, or sleeplessness, is common, especially among mothers with young children, and among the victims of overwork and anxiety. Students in colleges often complain of sleeplessness. It is a perilous thing to resort to drugs. The only real cure is found in physical labor. Fatigue from exercise in the open air is almost invariably followed be sound sleep.—*Dio Lewis' Monthly.*

Mechanics who rise.—There is a large sized nugget of truth in this from Dr. J. M. Buckley's series of "Letters to Young men," in the New York *Christian Advocate:*

"Benjamin Franklin told the truth when he said that the best knowledge a man could give to his son was the mastery of a good trade. Such a man is cosmopolitan. He can make himself useful anywhere, and he can live anywhere. If it should not be necessary always to work at his trade, he feels the ability within to support himself. . . . Between the average mechanic and the great manufacturer or merchant prince, great numbers can be found who began as mechanics and who have taken positions by their mechanical skill fully equal to that of the average merchant, and far superiorto that of most clerks and professional men. . . . . .

Always have in view rising above the position of a mere journeyman Look at things from a broad, business point of view. Consider that some day you may not be a journeyman, and try to study the relation of capital to labor, and to master the principles of business, so that, if you should ever form a partnership with a business man, you will not be at his mercy, and so that, if you choose, you may at any time enter upon business for yourself, and not fritter away your life in a vain effort to overcome by mechanical skill financial obstacles."

The Earth more Rigid than Steel.—Professor Sir W. Thomsons in his new treatise on natural philosophy, is led, by a consideration of the necessary order of cooling and consolidation of the earth, to infer that the interior of our world is not, as commonly supposed, all liquid, with a thin, solid crust of from 30 to 100 miles thick, but that it is on the whole more rigid than a continuous solid globe of glass of the same diameter, and probably more rigid than such a globe of steel.

Hardening Gypsum and Alabaster.—Articles cut out of crude gypsum are hardened by dipping into a bath consisting of alum and oxalic acid or an oxalate; they are next dried and then immersed in a coloring fluid. The first mentioned hardening fluid may also be combined with the latter, by mixing the pigment, fuchsine, etc., with it.

Keeping the teeth clean is one of the principal secrets of keeping them healthy. In filling see that the approximal surfaces are left free. If contact is unavoidable it should be in the surfaces of the gold fillings, or near the grinding surfaces of the teeth; and the patient should be impressed with the vital importance of habitual cleanliness. Let them understand that you are not at all responsible for the permanency of the fillings without cleanliness of the whole mouth.